



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



ICRISAT
INTERNATIONAL CROPS RESEARCH
INSTITUTE FOR THE SEMI-ARID TROPICS



Training workshop on Participatory Integrated Climate Services for Agriculture (PICSA)

04-08/May/2017

Bougouni, Mali



Organized by

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT – Mali)

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I) Introduction

ICRISAT has launched a new project, under the Africa RISING program, whose objective is to scale climate services in Mali, more precisely in Bougouni. The aim of the project is to capacitate farmers and farming communities so that they are able to practice more productive, resilient, profitable and sustainable intensified crop-livestock systems linked to markets. To reach its planned objectives, ICRISAT decided to implement the Participatory Integrated Climate Services for Agriculture (PICSA) approach. This approach, created by the University of Reading, aims at providing farmers with locally specific climate information, together with diverse locally pertinent options on crops, livestock and other livelihood activities to aid their decision making and therefore improve their livelihood. The PICSA approach is now being implemented in West Africa (Burkina Faso, Ghana, Mali and Senegal) under the CCAFS funded project “Capacitating African Smallholders with Climate Advisories and Insurance development CASCAID)” lead by ICRISAT and ICRAF, in Kenya, Rwanda, Uganda, Tanzania, Zimbabwe and Columbia.

In this regard, ICRISAT in collaboration with ICRAF and Mali-Meteo, has organized a “training of trainers (TOT)”, from 04th to 08th of May 2017 in Bougouni, to capacitate Africa RISING field agents and extension officers of other institutions with the PICSA approach. There were in total 19 participants, including one female, from diverse institutions, RICOB, AOPP, FENABE, Ministry of Agriculture, SLPIA, Ministry of Water and Forestry, CMDT, AVRDC, and 6 resource persons from Mali-Meteo, ICRAF and ICRISAT. This report therefore consists of brief summaries of each session of the training per day including the field day, as well as the participants’ training evaluation (Appendix 2).

II) Training’s Sessions

1) Day 1

- The training was opened with two speeches by Mr. Dicko Mahamadou Moctar (Coordinator of the Africa RISING program in Bougouni) and Dr. Boubou Traoré (Scientist at ICRISAT) who both welcomed the participants and encouraged them to take the best out of the training.
- **Introduction: objectives and content of the training**
The first session of the day Was made of a talk on the main objectives of the workshop and the content of the training which were to strengthen the capacity of the participants so that they can (1) facilitate farmers to make informed decisions based



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on (i) accurate, location specific, climate and weather information and (ii) locally relevant crop, livestock and livelihood options, (2) use participatory planning tools to aid decision making; (3) by the end of the course, use the PICSA approach with farmers. The presenter also stressed that the PICSA approach, a step by step one, was designed for field staffs to (1) complement the job they are already doing with farmers and (2) help them doing the job better with new tools, new information and data. She concluded this session by giving the content of the 5 days training..

- **Introduction to the PICSA approach**

The aim of the presentation was to provide general information about the PICSA approach. The presenter started off with specifying that the approach focusses on the farmer, by bringing climate information (historical time series and seasonal forecast), developing diverse options and making use of decision making tools to help them individually make informed decision based on their specific context. The presenter went on with specifying that the approach is divided into 12 steps categorized into 4 periods (i) long before the season where farmers are being provided with locally specific climate information, crop, livestock and other livelihood options, together with decision making tools to make informed decisions and therefore plan for the upcoming rainy season; (ii) just before the season, where farmers received the climate seasonal forecast to finalize plans made in (i); (iii) during the season, when farmers plan and finalize their daily activities based on short term forecast and (iv) after the season, where the approach is evaluated. The presenter continued with introducing the twelve steps that make PICSA.

- **What is climate variability and change?**

This presentation aimed at explaining to participants the difference between climate change and climate variability. After giving the definition of climate, the presenter went on with defining climate variability – which is a natural year to year dynamic of the climate (e.g.: seasonal rainfall totals year to year dynamic), and continued with a definition of climate change – which is the long term change (increasing or decreasing) in climate pattern observed over a long period of time (30 years and above) and this change is usually caused by anthropogenic activities.

- **What does the farmer currently do?**

This is the first step of the PICSA approach (**step A**). Its aim is to i) identify and understand the main activities carried by the farmer/household, its resources, how those resources are used and what are the produce of his activities and ii) understand how each of those activities are affected by the climate. This

step consists of two participatory tools, - the Resource Allocation Map (RAM) which satisfies objective i) above and which helps the farmer to improve activities and resource mapping; the Seasonal Calendar which satisfies objective ii) above and which also helps farmers to identify which types of climate services he may need to succeed in his activities. After having been explained how to draw these tools, participants were split into three groups to exercise themselves on the tools just learnt. The presenter clearly stressed on the fact that each of these tools is drawn individually by each farmer as farmers are different.

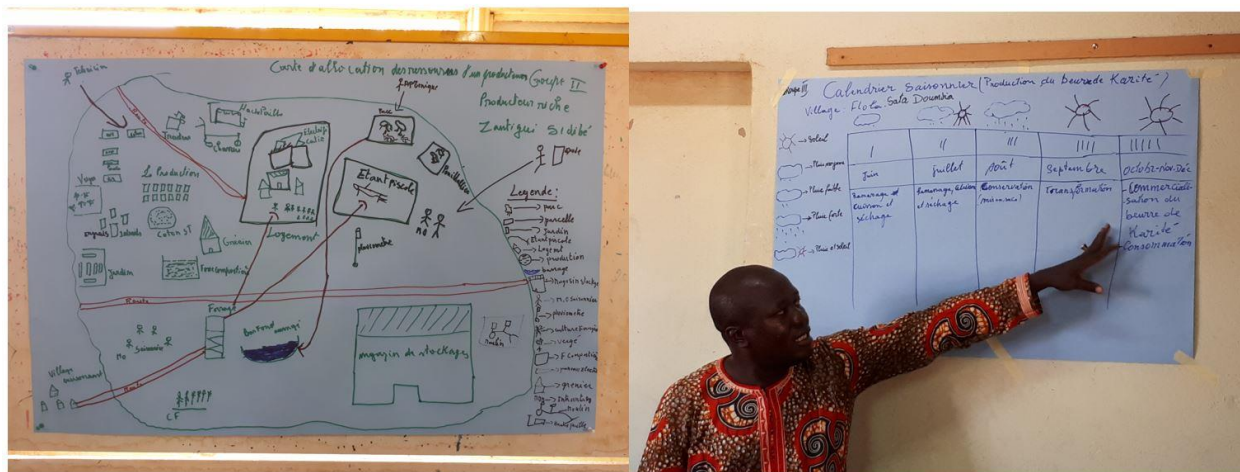


Figure 1: Example of Resource Allocation map (RAM - first picture) and Seasonal Calendar (SC)

• Historical Climate Information

This is the second step of the PICSA approach (**step B**) and its aim is to explain to farmers how rainfall data are collected, compare their perception with historical graphics and help them understand the climate of their locality which maybe be useful in their decision making. It also helps them to be aware of causes other than the climate which may be additional sources of the challenges they are facing, and together with the field agents, identify possible solution to mitigate their negative impacts. Using historical graphics of Bougouni, participants were tasked to identify if there is climate change and variability, and compare the information with farmer's perceptions. The historical graphs consist of seasonal rainfall totals, start of the rain dates, length of the rainy season, number of rainy days during the season, dry spells during month of critic growth of the plant, end of the rainy season, and temperature data.

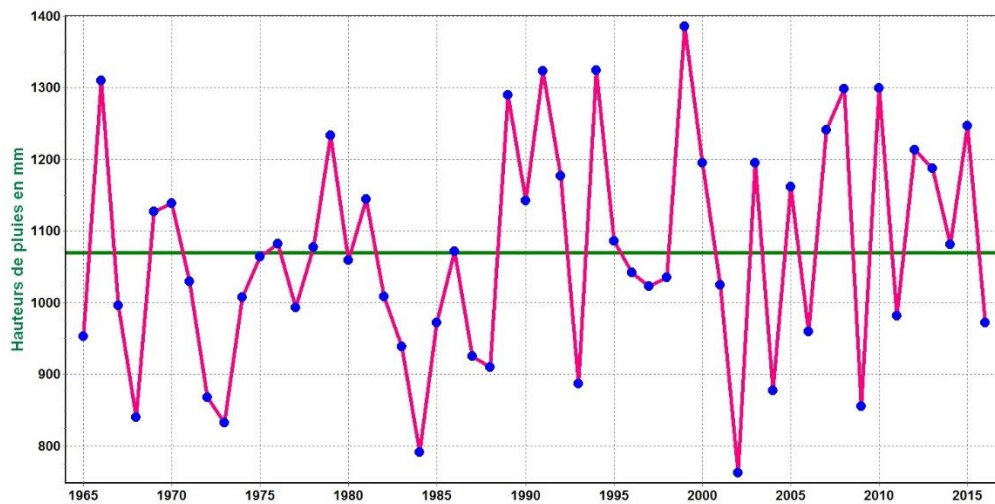


Figure 2: Seasonal Rainfall Totals of Bougouni Meteorological Station

2) Day 2

- **Use historical graphs to compute probabilities and risks (step C)**

This helps farmers to compute the probabilities of various climatic and weather conditions which are crucial for their activities. This help them make informed decisions on the types of crop and varieties to cultivate, on optimal sowing dates, how to manage their livestock and maybe engagement in other livelihoods. The presenter explained to participants how to compute the probability of getting 1200mm and above in Bougouni, which is about 1 in every 4 years. The participants exercised themselves on computing the probability of other climate conditions (e.g.: probability that the rainy season starts by the 29th of May) and make inference based on this information for their activities.



Figure 3: Participants computing probabilities and risks.

- **Crop, livestock and other livelihoods options (step D)**

The objectives of this step is to develop together with the farmer, a range of options on crop, livestock, and other livelihoods already existing in or that may be useful to the locality, identify their performance in difference climate scenarios and also additional related risks, so that every farmer, be it poor or rich, female or male, may find what best suits his/her household. In Addition information provided for each option include, who does the option, what is the benefit and who benefits it, and what is the time needed to start benefiting? For example, a crop option matrix, consists of all practices, locally existing or new, that (may) contribute to the increase of yield production in the locality. After having understood how to develop an option matrix, participants were tasked to develop one for crop (group 1), livestock (group 2) and other livelihoods (group 3).



Figure 4: participants presenting their work on options matrices on crops, livestock and other livelihoods

- **Option by context (step E)**

. In this step, farmers are asked to look through the options listed in step D and identify which ones they would like to try based on their specific context (poor, rich, female, male, shepherd, fishermen ...).

- **Compare options and plan for the next season (step F)**

This step aim at helping the farmer scrutinizing various options selected in step D, to increase their capacity to exactly decide which option (s) is (are) best for his/her household and plan for the upcoming rainy season. The farmer makes use of the Participatory Budget to achieve this purpose; this is a decision making tool used to (i) assess the required investments and possible benefits of various options selected in step D; (ii) help farmers choose which options best suit their

household; and (iii) plan and prepare how to integrate those options in the next rainy season activities. The presenter explained to the auditors how to create a participatory budget for budgetisable activities and tasked them to develop their own participatory budget for specific options just like in step D.

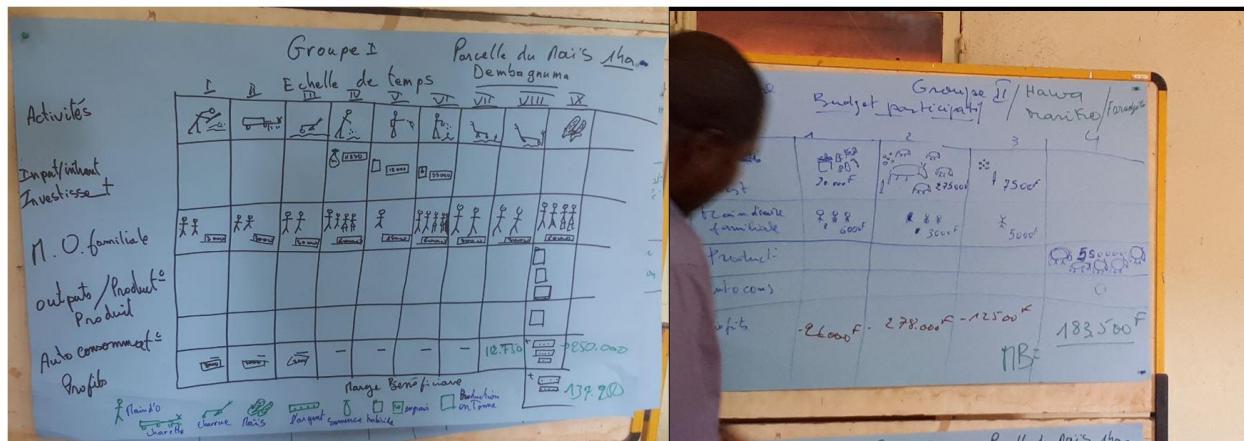


Figure 5: Example of Participatory Budget – Decision making tool

- The farmer decides (step G)**

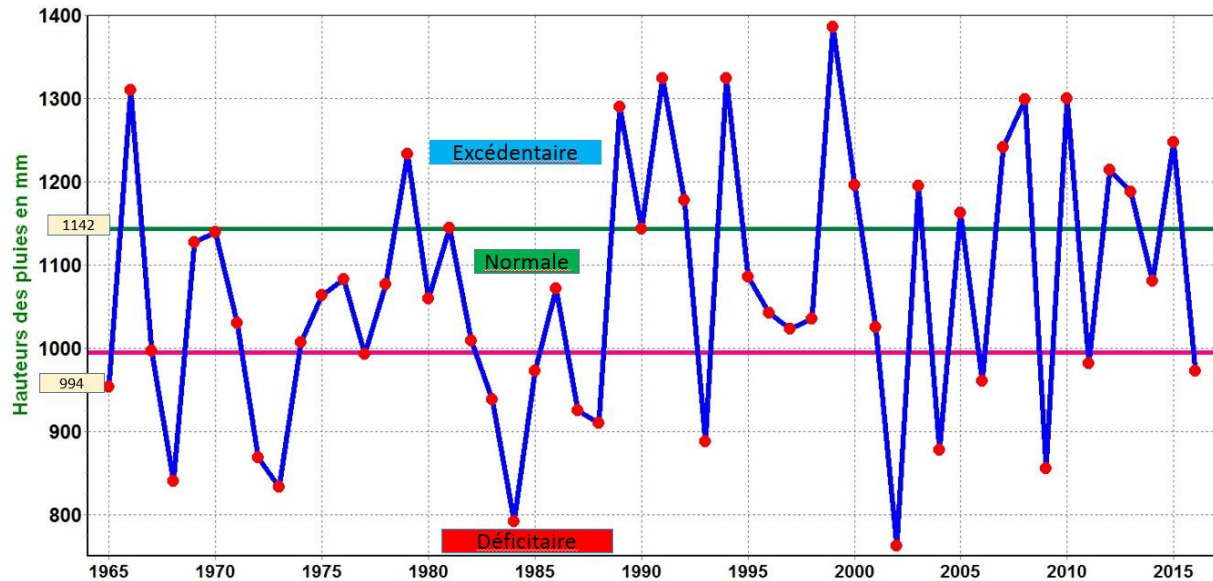
The aim of this step is to -help farmers make the best decision for the next cropping season based on all information received and on their specific context, and -assist them in the integration of those decisions in their various activities (by looking for sustainable ways to implement those decision). The participants were advised not to decide for farmers but to raise the awareness on possible risks and advantages for various context specific options that may suit their individual household. Emphasis was put on the fact that the farmer should be the one taking the decisions because he is the one to bear all the risks. This step also lead farmer to update RAM and SC made in step 1.

This marks the end of the first phase of the PICSA approach, long before the season, where farmers rely on historical climate information, various options on crop, livestock and other livelihoods, and on decision making participatory tools to make informed decision and plan their various activities ahead of the season. They subsequently wait for the seasonal climate forecast to finalize those plans.

- Seasonal climate forecast (SCF) and final plans (Step H & I – second phase of PICSA)**

These steps Helps farmers understand SCF (understand the meaning of the climate being normal, below or above normal using the terciles of seasonal rainfall totals), understand the implication of the SCF of the current year and modify the plans made in the first phase if these are not similar to those

implications, and also based on the performance of the SCF provided by the national meteorological Agency. The presenter started off, by presenting the different types of forecast usually provided by Mali-Meteo as well as brief interpretation of those, and gave a homework to participants. The homework consisted of making inferences on agriculture, livestock, agroforestry, fisheries and other livelihoods, based on various seasonal forecast scenarios.



NB : Classement de la série historique
Source : MALI-METEO

Figure 6: Seasonal Rainfall Totals of Bougouni Meteorological Station divided into three equal part.

3) Day 3

- **Short term forecast and warnings, and final plans (Step J & K – third phase of PICSA)**

The short term forecast and warnings help farmers make decisions on their daily activities. These steps consist of helping farmers understand short term forecast and warnings they received, be it via radio or phone messages, how these information can be interpreted and used in their day to day activities. The meaning of the various symbols and terminologies used in short term forecast were explained to the guests.

The third day then continued with a preparation of the field day, the day where participants were to practice what they had been learning and identified room for improvement. The participants were given a brief summary of PICSA, from step A to K, with explanations on how each step are consistently connected to each other. In addition they received a short presentation on facilitation tips and later prepared for the field day.

4) Day 4 – Field Day

The field day was at Flola, a village located at 25 km from Bougouni. Three groups were formed, one with only women, one with old men and another one with young men. There were in total 50 farmers, 20 females and 30 males. Participants used this opportunity to practice what they had been learning for the past three days. Farmers were very enthusiastic with the historical climate information presented to them. The group of women mentioned the need to also be involved in the rainfall recording using the existing manual rain gauge installed in the village. Participants left Bougouni town at 7h50 am and returned at 4 pm in the afternoon.



Figure 6: Field day - gathering of participants and farmers of Flola (first picture), and women farmers computing probabilities (second picture)



5) Day 5

The fifth day of the training was mainly marked by:



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- **Reports of the field day** from the three groups formed – groups reported the field day as very useful as it helped them to evaluate themselves. All groups reported that farmers were very keen with understanding the climate information presented to them, though teaching them how to compute probabilities and risks was not an easy task due to the time constraints and translation of concepts into the local language. The women group requested the field agents to make an appeal to the men of the village so that these latter can involve them into rainfall recording. An appeal was made by the field agents for the titles of the various graphics to be translated in local language for future trainings.
- **Discussion on input accessibility** – Aside providing farmers with useful information to aid their decision making, PICSA also aims at helping them to implement those decisions as far as inputs accessibility is concerned. During this training actors providing inputs (seeds, fertilizers, herbicides and others) were invited. These actors include CMDT, Dalabani Cooperative, SLPIA and Ministry of Agriculture. Each informed participants of the various input accessible from their institutions. This information should be shared with farmers, should there be input not accessible from their localities.
- **Meeting with Africa Rising field agents** – A short meeting was organized with field agents of the project to establish operational plans to share the PICSA approach with farmers in the week following the end of the training. There were in total height field agents and a couple was allocated to each of the four villages. The field agents Using a road map developed by Catherine Dembele and Djibril Dayamba from ICRAF, It was agreed that about 4 to 6 meetings are required to completely implement PICSA with farmers, though this can be highly influenced by farmer's availability. The field agents were also called to take advantage of the presence of the resource persons and mention any challenge they had regarding the understanding of any concept of the approach.

III) Conclusion

The training successfully ended on Monday 8th of May with a word by Dr Bouba Traore, who thanked all participants and resource persons for their hard work, and with certificates handling. Africa RISING field agents confidently left the hall, looking forward to start implementation in the four Africa RISING villages (Dieba, Flola, Madina and Sibirila). For this first year of the project 200 farmers are targeted. We are expecting to



reaching more farmers the coming year, and to scale out the approach to other Africa RISING regions such Koutiala and Mopti.

IV) Appendices

• Appendix 1 – Training program

Jour 1	Temps	Thème	Responsable	Etape
8.30	30	Inscription	Dicko	Introd.
	10	Mot de bienvenue et ouverture	Dicko/Bouba	
	15	Présentation des participants		
	15	Introduction : Objectif et contenu de la formation	Catherine	
	20	Généralités sur l'approche PICSA	Djibril	
Pause-café – 10.00-10.30 incl. photo				
	30	Climat, variabilité et changements du climat?	Mali-Météo	
	1.30	Que fait le producteur ? Carte d'allocation des ressources (exercice) Calendrier saisonnier (exercice)	Bouba /Andrée -	Etape A
	10	Informations Climatiques Historiques - Comment ont été collectées et traitées les données historiques ?	Mali-Météo	Etape B
	20	Information Climatique Historique pour votre localité 1: utilisation des graphiques (Exercice)	Andree	
Déjeuner – 1.00-2.00				
	1h	Information Climatique Historique cont.: interprétation des graphiques (Exercice)	Andree	
	1h	Utilisation des graphiques pour calculer les probabilités des conditions météorologiques et climatiques (Exercice)	Andree	Etape C
Pause-café – 16-16.30				
	30	Revue de la journée		
Jour 2 – débute à 8.00				
8.00	8.15	Revue des activités du jour 1 et programme du jour 2	Goita / Dembele Participants	
8.15	8.30	Information Climatique Historique cont.: interprétation des graphiques (Exercice)	Andrée	
8.30	9.30	Utilisation des graphiques pour calculer les probabilités des conditions météorologiques et climatiques (Exercice)	Andrée	Étape C
9.30	10.10	Options pour l'agriculture, la production animale et autres moyens de subsistance (présentation)	Bouba/Djibril / Catherine	Etape D
Pause-café – 10.10-10.30				
10.30	11.30	Options pour l'agriculture, la production animale et autres moyens de subsistance (exercices)	Bouba / Djibril / Catherine	Etape D



11.30	12.00	Restitution	Bouba / Djibril / Catherine	Etape D
12.00	12.30	Options par contexte	Andrée	Etape E
Déjeuner – Prière : 12.30-14.00				
14.00	15.20	Planification pour les cultures sélectionnées, les options de production animale et autres moyens de subsistance (Budgets Participatifs) / Restitutions de l'exercice sur le budget participatif	Catherine / Andrée	Etape F
15.20	15.30	Le producteur décide	Andree	G
15.30	16.00	Qu'est-ce que la prévision saisonnière? Comment est-elle produite et communiquée, quels sont ses avantages et ses limites?	Mali-Météo	Etape H
Pause-café – 16.00-16.10				
16.10	16.30-17.00	Comprendre et interpréter la prévision saisonnière (graphique des terciles) - Exercice Comment communiquer avec les producteurs ? Adaptation des plans des activités à l'information climatique (Se préparer à modifier les plans)?	Mali-Météo/	
Jour 3 - débute à 8.30				
8.30	8.45	Revue du jour 2	Maiga/ Bamba Participants	
8.45	10.00	Comprendre et interpréter la prévision saisonnière (graphique des terciles) - Exercice Comment communiquer avec les producteurs ? Adaptation des plans des activités à l'information climatique (Se préparer à modifier les plans)?	Mali Meteo	Etape J
pause-café – 10.-10.30				
10.30	11.00	Prévisions à court terme et alertes. Comment et quand sont-elles produites et communiquées ?	Mali-Météo	Etape J
11.00	11.30	Interpréter les messages d'alerte et de prévision à court terme (exercice) Quel est le contenu des prévisions de court et moyen termes que vous recevez? Comment utilisez-vous ces prévisions? (Comment améliorer la communication?)	Mali-Météo e	Etape J
11.30	12.30	Revue du processus et des points importants (récapitulatif de toute l'approche PICSA)	Djibril	
Déjeuner – 13.00-14.00				
14.00	14.30	Planification de la pratique de terrain Information concernant la communauté Objectifs des travaux de terrain	Dicko/ Djibril	
14.30	14.45	Astuces pour la facilitation	Catherine	
14.45	16.40	Préparer le matériel et pratiquer les exercices pour la pratique de terrain	Participants / organisateurs	



		Discussion dans les groupes (Identification des animateurs de groupes/étapes, etc.)		
Pause-café – 15.40-15.45				
Jour 4 débute à 8.00				
		Pratique de terrain dans le village de Flola	Participants / Organismes	
jour 5 débute à 8.30				
8.30	9.30	Discussion, évaluation, leçons apprises (en groupes suivi de rapportage en plénière)	Catherine / Djibril/Andrée	30 min, 30 min, min
9.30	10.30	Discussion sur l'accès aux intrants (semences, etc.) Production et circuits de distribution des semences améliorés	CMDT, Cooperative de Dalabani, SLPIA	60 min
Pause-café 10.30 – 11.00				
11.00	11.10	Revue sur l'approche PICSA et de ses composants clés	Djibril	
11.10	11.30	Evaluation de la formation	Andree/Dicko	20 min
11:30	12:00	Remise des certificats et clôture	Participants	30 min
Déjeuner – 12.00-13.00				
13.00	14.30	Rencontre avec agents d'Africa RISING		

- Appendix 2 – Training Evaluation summary by Participants:**

- What aspect of the trainings participants liked?

- Resource Allocation Maps (RAM)
 - Climate information : understanding the difference between climate variability and change, how to make use of historical climate information (graphics), provided by Mali Meteo, to compute risks of various events happening, and seasonal climate forecast (SCF)
 - Participatory budget
 - Crop, livestock and other livelihood options

- What else participants have learned:

- How important it is that the farmer should be the one who decides
 - The importance of considering climate information (eg: SCF) in decision making for agricultural activities
 - Various actors in the agricultural sector, particularly farmers, should change their behavior in view of the situation posed by an increasing climate variability and change



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- How the CMDT (Companie Malienne de Textile) loan inputs to farmers
- About the existence of the GLAM (Groupe Locaux Agro-Meteorologiques) I Bougouni

➤ What additional information/activity people may have loved to have?

- Technologies to fight against crop diseases and insects
- Do field experiments to help them choose improved varieties and hybrids
- Technology to fight against Striga
- Reforestation
- How to collect rainfall information using a rain gauge
- Human activities that lead to climate change
- Strategies to help farmers commercialized their produce

➤ Suggestions:

- Translation of the field manual into local languages to ease use by literate farmers
- Increase the time of the training (longer than just 5 days)

➤ Most of the participants found each aspect of the training pertinent or very pertinent.